



SEQUENCE LISTING

<110> MASCI, PANTALEONE PAUL

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GAFFNEY, PATRICK JOSEPH

SOROKINA, NATALYA IGOREVNA

FILIPPOVICH, IGOR VLADIMIROVICH

<120> PLASMIN INHIBITORS FROM THE AUSTRALIAN BROWN SNAKE
PSEUDONAJA TEXTILIS TEXTILIS

<130> 017227-0193

<140> 09/700,179

<141> 2001-07-27

<150> PCT/AU99/00343

<151> 1999-05-07

<150> AU PP3450

<151> 1999-05-11

<160> 70

<170> PatentIn Ver. 3.3

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1 5 10 15aga gtc aga ttc cca tcc ttc tac tac aac cca gat gaa aaa aag tgc 96
Arg Val Arg Phe Pro Ser Phe Tyr Tyr Asn Pro Asp Glu Lys Lys Cys
20 25 30cta gag ttt att tat ggt gga tgc gaa ggg aat gct aac aat ttt atc 144
Leu Glu Phe Ile Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asn Phe Ile
35 40 45acc aaa gag gaa tgc gaa agc acc tgt gct gcc tga 180
Thr Lys Glu Glu Cys Glu Ser Thr Cys Ala Ala
50 55

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Arg Val Arg Phe Pro Ser Phe Tyr Tyr Asn Pro Asp Glu Lys Lys Cys
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Leu Glu Phe Ile Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asn Phe Ile
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Thr Lys Glu Glu Cys Glu Ser Thr Cys Ala Ala
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Lys Asp Arg Pro Glu Leu Cys Glu Leu Pro Pro Asp Thr Gly Pro Cys
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aga gtc aga ttc cca tcc ttc tac tac aac cca gat gaa caa aaa tgc   96
Arg Val Arg Phe Pro Ser Phe Tyr Tyr Asn Pro Asp Glu Gln Lys Cys
    20          25          30

cta gag ttt att tat ggt gga tgc gaa ggg aat gct aac aat ttt atc   144
Leu Glu Phe Ile Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asn Phe Ile
    35          40          45

acc aaa gag gaa tgc gaa agc acc tgt gct gcc tga   180
Thr Lys Glu Glu Cys Glu Ser Thr Cys Ala Ala
    50          55

<210> 4
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<212> PRT
<213> Pseudonaja textilis

<400> 4
Lys Asp Arg Pro Glu Leu Cys Glu Leu Pro Pro Asp Thr Gly Pro Cys

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20		25	30
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Lys Asp Arg Pro Asn Phe Cys Lys Leu Pro Ala Glu Thr Gly Arg Cys			
1	5	10	15
aat gcc aaa atc cca cgc ttc tac tac aac cca cgt caa cat caa tgc			96
Asn Ala Lys Ile Pro Arg Phe Tyr Tyr Asn Pro Arg Gln His Gln Cys			
20	25	30	
ata gag ttt ctc tat ggt gga tgc gga ggg aat gct aac aat ttt aag			144
Ile Glu Phe Leu Tyr Gly Cys Gly Asn Ala Asn Asn Phe Lys			
35	40	45	
acc att aag gaa tgc gaa agc acc tgt gct gca tga			180
Thr Ile Lys Glu Cys Glu Ser Thr Cys Ala Ala			
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Asn Ala Lys Ile Pro Arg Phe Tyr Tyr Asn Pro Arg Gln His Gln Cys			
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aaa ggc aac gtc cca cgc ttc tac tac aac gca gat cat cat caa tgc 96
 Lys Gly Asn Val Pro Arg Phe Tyr Tyr Asn Ala Asp His His Gln Cys
 20 25 30

cta aaa ttt att tat ggt gga tgt gga ggg aat gct aac aat ttt aag 144
 Leu Lys Phe Ile Tyr Gly Gly Cys Gly Asn Ala Asn Asn Phe Lys
 35 40 45

acc ata gag gaa ggc aaa agc acc tgt gct gcc tga 180
 Thr Ile Glu Glu Gly Lys Ser Thr Cys Ala Ala
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 35 40 45

Thr Ile Glu Glu Gly Lys Ser Thr Cys Ala Ala
 50 55

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aag gac cgt cca aaa ttc tgt gaa ctg ctt cct gac acc gga tca tgt	48
Lys Asp Arg Pro Lys Phe Cys Glu Leu Leu Pro Asp Thr Gly Ser Cys	
1 5 10 15	

gaa gac ttt acc gga gcc ttc cac tac agc aca cgt gat cgt gaa tgc	96
20 25 30	

ata gag ttt att tat ggt gga tgc gga ggg aat gct aac aat ttt atc	144
Ile Glu Phe Ile Tyr Gly Gly Cys Gly Asn Ala Asn Asn Phe Ile	
35 40 45	

acc aaa gag gaa tgc gaa agc acc tgt gct gcc tga	180
Thr Lys Glu Glu Cys Glu Ser Thr Cys Ala Ala	
50 55	

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Ile Glu Phe Ile Tyr Gly Gly Cys Gly Asn Ala Asn Asn Phe Ile	45
35 40 45	

Thr Lys Glu Glu Cys Glu Ser Thr Cys Ala Ala	
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gat gac ttt acc gga gcc ttc cac tac agc cca cgt gaa cat gaa tgc 96
 Asp Asp Phe Thr Gly Ala Phe His Tyr Ser Pro Arg Glu His Glu Cys
 20 25 30

ata gag ttt att tat ggt gga tgc aaa ggg aat gct aac aac ttt aat 144
 Ile Glu Phe Ile Tyr Gly Cys Lys Gly Asn Ala Asn Asn Phe Asn
 35 40 45

acc caa gag caa tgc gaa agc acc tgt gct gcc tga 180
 Thr Gln Glu Gln Cys Glu Ser Thr Cys Ala Ala
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<213> Pseudonaja textilis

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 1 5 10 15

Asp Asp Phe Thr Gly Ala Phe His Tyr Ser Pro Arg Glu His Glu Cys
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 35 40 45

Thr Gln Glu Gln Cys Glu Ser Thr Cys Ala Ala
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 1 5 10 15

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gag gtg ctg acc ccc gtc tcc agc aag gac cgt ccg gat ttc tgt gaa 96 Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Asp Phe Cys Glu -5 -1 1 5	
ctg cct gct gac acc gga cca tgt aga gtc aga ttc cca tcc ttc tac 144 Leu Pro Ala Asp Thr Gly Pro Cys Arg Val Arg Phe Pro Ser Phe Tyr 10 15 20	
tac aac cca gat gaa aaa aag tgc cta gag ttt att tat ggt gga tgc 192 Tyr Asn Pro Asp Glu Lys Lys Cys Leu Glu Phe Ile Tyr Gly Gly Cys 25 30 35 40	
gaa ggg aat gct aac aat ttt atc acc aaa gag gaa tgc gaa agc acc 240 Glu Gly Asn Ala Asn Asn Phe Ile Thr Lys Glu Glu Cys Glu Ser Thr 45 50 55	
tgt gct gcc tga	252

Cys Ala Ala

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<210> 16
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<213> Pseudonaja textilis

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Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Asp Phe Cys Glu
      -5            -1    1           5

Leu Pro Ala Asp Thr Gly Pro Cys Arg Val Arg Phe Pro Ser Phe Tyr
      10           15           20

Tyr Asn Pro Asp Glu Lys Lys Cys Leu Glu Phe Ile Tyr Gly Gly Cys
      25           30           35           40

Glu Gly Asn Ala Asn Asn Phe Ile Thr Lys Glu Glu Cys Glu Ser Thr
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Cys Ala Ala

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<210> 17
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gag gtg ctg acc ccc gtc tcc agc aag gac cgt cca gag ttg tgt gaa 96
Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Glu Leu Cys Glu
      -5            -1    1           5

ctg cct cct gac acc gga cca tgt aga gtc aga ttc cca tcc ttc tac 144
Leu Pro Pro Asp Thr Gly Pro Cys Arg Val Arg Phe Pro Ser Phe Tyr

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gaa ggg aat gct aac aat ttt atc acc aaa gag gaa tgc gaa agc acc Glu Gly Asn Ala Asn Asn Phe Ile Thr Lys Glu Glu Cys Glu Ser Thr 25	45	50	55
tgt gct gcc tga Cys Ala Ala			252
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Leu Pro Pro Asp Thr Gly Pro Cys Arg Val Arg Phe Pro Ser Phe Tyr 10 15 20			
Tyr Asn Pro Asp Glu Gln Lys Cys Leu Glu Phe Ile Tyr Gly Gly Cys 25 30 35 40			
Glu Gly Asn Ala Asn Asn Phe Ile Thr Lys Glu Glu Cys Glu Ser Thr 45 50 55			
Cys Ala Ala			

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gag gtg ctg acc ccc gtc tcc agc aag gac cgt cca aat ttc tgt aaa Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Asn Phe Cys Lys -5 -1 1 5	96
ctg cct gct gaa acc gga cga tgt aat gcc aaa atc cca cgc ttc tac Leu Pro Ala Glu Thr Gly Arg Cys Asn Ala Lys Ile Pro Arg Phe Tyr 10 15 20	144
tac aac cca cgt caa cat caa tgc ata gag ttt ctc tat ggt gga tgc Tyr Asn Pro Arg Gln His Gln Cys Ile Glu Phe Leu Tyr Gly Cys 25 30 35 40	192
gga ggg aat gct aac aat ttt aag acc att aag gaa tgc gaa agc acc Gly Gly Asn Ala Asn Asn Phe Lys Thr Ile Lys Glu Cys Glu Ser Thr 45 50 55	240
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Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Asn Phe Cys Lys -5 -1 1 5	252
Leu Pro Ala Glu Thr Gly Arg Cys Asn Ala Lys Ile Pro Arg Phe Tyr 10 15 20	252
Tyr Asn Pro Arg Gln His Gln Cys Ile Glu Phe Leu Tyr Gly Cys 25 30 35 40	252
Gly Gly Asn Ala Asn Asn Phe Lys Thr Ile Lys Glu Cys Glu Ser Thr 45 50 55	252
Cys Ala Ala	

<210> 21	
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-20 -15 -10

gag gtg ctg acc ccc gtc tcc agc aag gac cat cca aaa ttc tgt gaa 96
Glu Val Leu Thr Pro Val Ser Ser Lys Asp His Pro Lys Phe Cys Glu
-5 -1 1 5

ctc cct gct gaa acc gga tca tgt aaa ggc aac gtc cca cgc ttc tac 144
Leu Pro Ala Glu Thr Gly Ser Cys Lys Gly Asn Val Pro Arg Phe Tyr
10 15 20

tac aac gca gat cat cat caa tgc cta aaa ttt att tat ggt gga tgt 192
Tyr Asn Ala Asp His His Gln Cys Leu Lys Phe Ile Tyr Gly Gly Cys
25 30 35 40

gga ggg aat gct aac aat ttt aag acc ata gag gaa ggc aaa agc acc 240
Gly Gly Asn Ala Asn Asn Phe Lys Thr Ile Glu Glu Gly Lys Ser Thr
45 50 55

tgt gct gcc tga 252
Cys Ala Ala

<210> 22
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<213> Pseudonaja textilis

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Glu Val Leu Thr Pro Val Ser Ser Lys Asp His Pro Lys Phe Cys Glu
-5 -1 1 5

Leu Pro Ala Glu Thr Gly Ser Cys Lys Gly Asn Val Pro Arg Phe Tyr
10 15 20

Tyr Asn Ala Asp His His Gln Cys Leu Lys Phe Ile Tyr Gly Gly Cys
25 30 35 40

Gly Gly Asn Ala Asn Asn Phe Lys Thr Ile Glu Glu Gly Lys Ser Thr
45 50 55

Cys Ala Ala

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          -20           -15           -10

gag gtg ctg acc ccc gtc tcc agc aag gac cgt cca aaa ttc tgt gaa      96
Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Lys Phe Cys Glu
          -5            -1   1           5

ctg ctt cct gac acc gga tca tgt gaa gac ttt acc gga gcc ttc cac      144
Leu Leu Pro Asp Thr Gly Ser Cys Glu Asp Phe Thr Gly Ala Phe His
          10           15           20

tac agc aca cgt gat cgt gaa tgc ata gag ttt att tat ggt gga tgc      192
Tyr Ser Thr Arg Asp Arg Glu Cys Ile Glu Phe Ile Tyr Gly Gly Cys
          25           30           35           40

gga ggg aat gct aac aat ttt atc acc aaa gag gaa tgc gaa agc acc      240
Gly Gly Asn Ala Asn Asn Phe Ile Thr Lys Glu Glu Cys Glu Ser Thr
          45           50           55

tgt gct gcc tga
Cys Ala Ala      252

<210> 24
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<212> PRT
<213> Pseudonaja textilis

<400> 24
Met Ser Ser Gly Gly Leu Leu Leu Leu Gly Leu Leu Thr Leu Trp
          -20           -15           -10

Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Lys Phe Cys Glu
          -5            -1   1           5

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Leu Leu Pro Asp Thr Gly Ser Cys Glu Asp Phe Thr Gly Ala Phe His
 10 15 20
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 Gly Gly Asn Ala Asn Asn Phe Ile Thr Lys Glu Glu Cys Glu Ser Thr
 45 50 55
 Cys Ala Ala

<210> 25
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 -20 -15 -10

gag gtg ctg acc ccc gtc tcc agc aag gac cgt cca aag ttc tgt gaa 96
 Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Lys Phe Cys Glu
 -5 -1 1 5

ctg cct gct gac atc gga cca tgg gat gac ttt acc gga gcc ttc cac 144
 Leu Pro Ala Asp Ile Gly Pro Trp Asp Asp Phe Thr Gly Ala Phe His
 10 15 20

tac agc cca cgt gaa cat gaa tgc ata gag ttt att tat ggt gga tgc 192
 Tyr Ser Pro Arg Glu His Glu Cys Ile Glu Phe Ile Tyr Gly Gly Cys
 25 30 35 40

aaa ggg aat gct aac aac ttt aat acc caa gag caa tgc gaa agc acc 240
 Lys Gly Asn Ala Asn Asn Phe Asn Thr Gln Glu Gln Cys Glu Ser Thr
 45 50 55

tgt gct gcc tga
 Cys Ala Ala

<210> 26

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 <213> Pseudonaja textilis

<400> 26
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Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Lys Phe Cys Glu
 -5 5

Leu Pro Ala Asp Ile Gly Pro Trp Asp Asp Phe Thr Gly Ala Phe His
 10 20

Tyr Ser Pro Arg Glu His Glu Cys Ile Glu Phe Ile Tyr Gly Gly Cys
 25 40

Lys Gly Asn Ala Asn Asn Phe Asn Thr Gln Glu Gln Cys Glu Ser Thr
 45 55

Cys Ala Ala

<210> 27
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<220>
 <223> Description of Artificial Sequence: Degenerate
 sense primer

<220>
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 <222> (21)
 <223> A, T, C, G, other or unknown

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 atgaargaya grcchgaryt ngar

24

<210> 28
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Degenerate
 antisense primer

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18

<210> 29
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Gene-specific forward primer for Txln1

<400> 29
atatatggat ccaaggaccg gcctgacttc 30

<210> 30
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Gene-specific reverse primer for Txln1

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aacgggaatt ctcagagcca cacgtgcttt c 31

<210> 31
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<212> DNA
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<220>
<223> Description of Artificial Sequence: Gene-specific reverse primer for Txln2

<400> 31
aacgggaatt ctcatgagcc acaggttagac tc 32

<210> 32
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: RACE-ready long universal reverse primer

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<210> 33
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<212> DNA
<213> Artificial Sequence

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<220>
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      short universal reverse primer

<400> 33
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<210> 34
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: RACE-ready
      nested universal reverse primer

<400> 34
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<210> 35
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<220>
<223> Description of Artificial Sequence: Txln1-gene
      specific forward primer

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<210> 36
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Txln1
      gene-specific reverse primer

<400> 36
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<210> 37
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Txln-active
      peptide sequence forward primer

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<400> 37
attataggat ccaaggacccg tccggat 27

<210> 38
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Gene-specific forward primer for txln2

<400> 38
attataggat ccaaggacccg tccagag 27

<210> 39
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Gene-specific forward primer for Txln3

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<210> 40
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Gene-specific forward primer for Txln4

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aacgtcggat ccaaggacca tccaaaa 27

<210> 41
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Gene-specific forward primer for Txln5

<400> 41
aacgtcggat tcaaggacccg tccaaaa 27

<210> 42

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<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Gene-specific
      forward primer for Txln6

<400> 42
attgtcgat ccaaggacct gccaaag 27

<210> 43
<211> 408
<212> DNA
<213> Pseudonaja textilis

<220>
<221> CDS
<222> (12)..(191)

<220>
<221> sig_peptide
<222> (12)..(83)

<220>
<221> mat_peptide
<222> (84)..(191)

<400> 43
ggagcttcat c atg tct tct gga ggt ctt ctt ctc ctg ctg gga ctc ctc 50
      Met Ser Ser Gly Gly Leu Leu Leu Leu Leu Gly Leu Leu
      -20           -15

acc ctc tgg gag gtg ctg acc ccc gtc tcc agc aag gac cgt cca gag 98
Thr Leu Trp Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Glu
      -10          -5           -1   1    5

ttg tgt gaa ctg cct cct gac acc gga cca tgt aga gtc aga tcc cca 146
Leu Cys Glu Leu Pro Pro Asp Thr Gly Pro Cys Arg Val Arg Ser Pro
      10            15           20

tcc ttc tac tac aac cca gat gaa caa aaa tgc cta gag ttt att 191
Ser Phe Tyr Tyr Asn Pro Asp Glu Gln Lys Cys Leu Glu Phe Ile
      25            30           35

tatggtgat gcgaaggaa tgctaaccaa tttatcacc aaagaggaat gcgaaagcac 251
ctgtgctgcc tgaatgagga gaccctcctg gattggatcg acagttccaa cttgacccaa 311
agaccctgct tctgccctgg accaccctgg acacccttcc cccaaacccc accctggact 371
aattcctttt ctctgcaata aagcttttgt tccagct 408

<210> 44
<211> 60

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<212> PRT
<213> Pseudonaja textilis

<400> 44
Met Ser Ser Gly Gly Leu Leu Leu Leu Leu Gly Leu Leu Thr Leu Trp
-20 -15 -10

Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Glu Leu Cys Glu
-5 -1 1 5

Leu Pro Pro Asp Thr Gly Pro Cys Arg Val Arg Ser Pro Ser Phe Tyr
10 15 20

Tyr Asn Pro Asp Glu Gln Lys Cys Leu Glu Phe Ile
25 30 35

<210> 45
<211> 59
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Formula peptide

<220>
<221> MOD_RES
<222> (3)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn; preferably His or Arg

<220>
<221> MOD_RES
<222> (5)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn; suitably Lys, Asn, Glu or Asp

<220>
<221> MOD_RES
<222> (6)
<223> Hydrophobic amino acid; preferably Phe or Leu

<220>
<221> MOD_RES
<222> (8)

<220>
<221> MOD_RES
<222> (10)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val or Leu; suitably Pro or Leu

<220>
<221> MOD_RES
<222> (11)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val

or Leu, preferably Pro or Ala

<220>
<221> MOD_RES
<222> (12)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn, preferably
Glu or Asp

<220>
<221> MOD_RES
<222> (13)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val
or Leu, suitably Thr or Ile

<220>
<221> MOD_RES
<222> (15)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (17)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn; suitably Lys,
Asn, Glu, Asp or Arg

<220>
<221> MOD_RES
<222> (18)
<223> Any amino acid; preferably Asp, Gly, Ala or Val

<220>
<221> MOD_RES
<222> (19)
<223> Any amino acid; suitably Phe, Asn, Lys or Arg

<220>
<221> MOD_RES
<222> (20)
<223> Any amino acid; preferably Thr, Pro, Phe or Ile

<220>
<221> MOD_RES
<222> (21)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val
or Leu

<220>
<221> MOD_RES
<222> (22)
<223> Any amino acid; suitably Ala, Ser or Arg

<220>
<221> MOD_RES
<222> (24)
<223> Aromatic amino acid; preferably Tyr or His

<220>

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<221> MOD_RES
<222> (26)
<223> Any amino acid; suitably Ser or Asn

<220>
<221> MOD_RES
<222> (27)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val
      or Leu; preferably Pro, Ala or Thr

<220>
<221> MOD_RES
<222> (28)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn

<220>
<221> MOD_RES
<222> (29)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn; suitably Glu,
      Asp, His or Gln

<220>
<221> MOD_RES
<222> (30)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn; preferably
      His, Lys, Arg or Gln

<220>
<221> MOD_RES
<222> (31)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn

<220>
<221> MOD_RES
<222> (33)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val
      or Leu; preferably Leu or Ile

<220>
<221> MOD_RES
<222> (34)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn; suitably Glu
      or Lys

<220>
<221> MOD_RES
<222> (36)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val
      or Leu; suitably Leu or Ile

<220>
<221> MOD_RES
<222> (41)
<223> Any amino acid; preferably Glu, Gly or Lys

<220>
<221> MOD_RES
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<222> (42)
 <223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val,
 Leu or Cys; preferably Gly

<220>
 <221> MOD_RES
 <222> (48)
 <223> Any amino acid; suitably Lys, Asn or Ile

<220>
 <221> MOD_RES
 <222> (50)
 <223> Any amino acid; preferably Lys, Gln or Ile

<400> 45
 Lys Asp Xaa Pro Xaa Xaa Cys Xaa Leu Xaa Xaa Xaa Xaa Gly Xaa Cys
 1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Phe Xaa Tyr Xaa Xaa Xaa Xaa Xaa Cys
 20 25 30

Xaa Xaa Phe Xaa Tyr Gly Gly Cys Xaa Xaa Asn Ala Asn Asn Phe Xaa
 35 40 45

Thr Xaa Glu Glu Cys Glu Ser Thr Cys Ala Ala
 50 55

<210> 46
 <211> 59
 <212> PRT
 <213> Pseudonaja textilis

<400> 46
 Lys Asp Arg Pro Asp Phe Cys Glu Leu Pro Ala Asp Thr Gly Pro Cys
 1 5 10 15

Arg Val Arg Phe Pro Ser Phe Tyr Tyr Asn Pro Asp Glx Lys Lys Cys
 20 25 30

Leu Glx Phe Ile Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asn Phe Ile
 35 40 45

Thr Lys Glu Glu Cys Glu Ser Thr Cys Gly Ser
 50 55

<210> 47
 <211> 59
 <212> PRT
 <213> Pseudonaja textilis

<400> 47
 Lys Asp Arg Pro Glu Leu Cys Glu Leu Pro Pro Asp Thr Gly Pro Cys
 1 5 10 15

Arg Val Arg Phe Pro Ser Phe Tyr Tyr Asn Pro Asp Glu Gln Lys Cys

<213> Pseudonaja textilis

<220>

<221> CDS

<222> (1)..(180)

<220>

<221> modified_base

<222> (177)

<223> A, T, C or G

<400> 50 48
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Met Lys Asp Arg Pro Asp Phe Cys Glu Leu Pro Ala Asp Thr Gly Pro
1 5 10 15

tgt aga gtc aga ttc cca tcc ttg tac tac aac cca gat gaa aaa aaa 96
Cys Arg Val Arg Phe Pro Ser Leu Tyr Tyr Asn Pro Asp Glu Lys Lys
20 25 30

tgc ctc gag ttt att tat ggt gga tgc gaa ggg aat gct aac gat ttt 144
Cys Leu Glu Phe Ile Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asp Phe
35 40 45

atg acc aaa gag gag tgt gaa agc acg tgt ggn agt 180
Met Thr Lys Glu Glu Cys Glu Ser Thr Cys Gly Ser
50 55 60

<210> 51 184
<211> 60
<212> PRT
<213> Pseudonaja textilis

<400> 51
Met Lys Asp Arg Pro Asp Phe Cys Glu Leu Pro Ala Asp Thr Gly Pro
1 5 10 15

Cys Arg Val Arg Phe Pro Ser Leu Tyr Tyr Asn Pro Asp Glu Lys Lys
20 25 30

Cys Leu Glu Phe Ile Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asp Phe
35 40 45

Met Thr Lys Glu Glu Cys Glu Ser Thr Cys Gly Ser
50 55 60

<210> 52
<211> 180
<212> DNA
<213> Pseudonaja textilis

<220>

<221> CDS

<222> (1)..(180)

<220>

<221> modified_base
<222> (177)
<223> A, T, C or G

<400> 52

atg aag gac cgg cct gag ttg tgt gaa ctg cct cct gac acc gga cca	48
Met Lys Asp Arg Pro Glu Leu Cys Glu Leu Pro Pro Asp Thr Gly Pro	
1 5 10 15	

tgt aga gtc aga ttc cca tcc ttg tac tac aac cca gat gaa caa aaa	96
Cys Arg Val Arg Phe Pro Ser Leu Tyr Tyr Asn Pro Asp Glu Gln Lys	
20 25 30	

tgc ctc gag ttt att tat ggt gga tgc gaa gag aat gat aac gct ttt	144
Cys Leu Glu Phe Ile Tyr Gly Gly Cys Glu Glu Asn Asp Asn Ala Phe	
35 40 45	

atg acc aaa gag gag tgt gaa agc acg tgt ccn ggt	180
Met Thr Lys Glu Glu Cys Glu Ser Thr Cys Pro Gly	
50 55 60	

<210> 53

<211> 60
<212> PRT
<213> Pseudonaja textilis

<400> 53

Met Lys Asp Arg Pro Glu Leu Cys Glu Leu Pro Pro Asp Thr Gly Pro	
1 5 10 15	

Cys Arg Val Arg Phe Pro Ser Leu Tyr Tyr Asn Pro Asp Glu Gln Lys	
20 25 30	

Cys Leu Glu Phe Ile Tyr Gly Gly Cys Glu Glu Asn Asp Asn Ala Phe	
35 40 45	

Met Thr Lys Glu Glu Cys Glu Ser Thr Cys Pro Gly	
50 55 60	

<210> 54

<211> 408
<212> DNA
<213> Pseudonaja textilis

<400> 54

ggagcttcat catgttttgc ggaggcttgc ttctcctgct gggactcctc accctctggg	60
agggtgctgac ccccgcttcc agcaaggacc gtccagagt gtgtgaactg cctcctgaca	120
ccggaccatg tagagtccaga tccccatctc tctactacaa cccagatgaa caaaaatgcc	180
tagagtttat ttatggtgaa tgcgaaaggaa atgctaaccat ttttatcac caaagaggaa	240
tgcgaaagca cctgtgtgc ctgaatgagg agaccctctt ggattggatc gacagttcca	300
acttgaccctt aagaccctgc ttctgcccctg gaccaccctg gacacccttc ccccaaacc	360
caccctggac taattccctt tctctgcaat aaagctttgg ttccagct	408

<210> 55
<211> 83
<212> PRT
<213> Pseudonaja textilis

Met Ser Ser Gly Gly Leu Leu Leu Leu Leu Gly Leu Leu Thr Leu Trp
1 5 10 15

Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Asp Phe Cys Glu
20 25 30

Leu Pro Ala Asp Thr Gly Pro Cys Arg Val Arg Phe Pro Ser Phe Tyr
35 40 45

Tyr Asn Pro Asp Glu Lys Lys Cys Leu Glu Phe Ile Tyr Gly Gly Cys
50 55 60

Glu Gly Asn Ala Asn Asn Phe Ile Thr Lys Glu Glu Cys Glu Ser Thr
65 70 75 80

Cys Ala Ala

<210> 56
<211> 252
<212> DNA
<213> Pseudonaja textilis

<400> 56
atgtcttctg gaggtcttct tctccctgctg ggactcctca ccctctggga ggtgctgacc 60
cccgcttcca gcaaggaccc tccggatttc tgtgaactgc ctgctgacac cggaccatgt 120
agagtcatgat tccccatcctt ctactacaac ccagatgaaa aaaagtgcct agagtttatt 180
tatggtgat gcgaaaggaa tgctaacaat ttatcacca aagaggaatg cgaaagcacc 240
tgtgctgcct ga 252

<210> 57
<211> 83
<212> PRT
<213> Pseudonaja textilis

<400> 57
Met Ser Ser Gly Gly Leu Leu Leu Leu Leu Gly Leu Leu Thr Leu Trp
1 5 10 15

Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Glu Leu Cys Glu
20 25 30

Leu Pro Pro Asp Thr Gly Pro Cys Arg Val Arg Phe Pro Ser Phe Tyr
35 40 45

Tyr Asn Pro Asp Glu Gln Lys Cys Leu Glu Phe Ile Tyr Gly Gly Cys
50 55 60

Glu Gly Asn Ala Asn Asn Phe Ile Thr Lys Glu Glu Cys Glu Ser Thr
 65 70 75 80

Cys Ala Ala

<210> 58
<211> 252
<212> DNA
<213> *Pseudonaja textilis*

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<400> 58
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cccgctccca gcaaggaccg tccagatgtg tgtgaactgc ctccctgacac cgaccatgt 120
agagtcatat tcccatcctt ctactacaac ccagatgaac aaaaatgcct agagtttatt 180
tatggtgat gcgaaggaa tgctaacaat tttatcacca aagaggaatg cggaaagcacc 240
tgtgctgcct ga
252
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<210> 59
<211> 83
<212> PRT
<213> *Pseudonaja textilis*

<400> 59
Met Ser Ser Gly Gly Leu Leu Leu Leu Leu Gly Leu Leu Thr Leu Trp
1 5 10 15

Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Asn Phe Cys Lys
20 25 30

Leu Pro Ala Glu Thr Gly Arg Cys Asn Ala Lys Ile Pro Arg Phe Tyr
 35 40 45

Tyr Asn Pro Arg Gln His Gln Cys Ile Glu Phe Leu Tyr Gly Gly Cys

Gly Gly Asn Ala Asn Asn Phe Lys Thr Ile Lys Glu Cys Glu Ser Thr
 65 70 75 80

Cys Ala Ala

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<210> 60
<211> 252
<212> DNA
<213> Pseudonaja textilis
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<400> 60
atgtcttctg gaggtcttct ttcctgtcg ggactccta ccccttgaa ggtgctgacc 60
cccgctcca gcaaggaccg tccaaatttc tgtaaactgc ctgctgaaac cgagcatgt 120
aatgccaaa tccccacgctt ctactacaac ccacgtcaac atcaatgcat agagttctc 180
tatggtgat gcggaggaa tgctaacaat tttaagacca ttaaggaatg cgaaagcacc 240
tgtgctgcat ga 252
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<210> 61
<211> 83
<212> PRT
<213> Pseudonaja textilis

<400> 61
Met Ser Ser Gly Gly Leu Leu Leu Leu Leu Gly Leu Leu Thr Leu Trp
1 5 10 15

Glu Val Leu Thr Pro Val Ser Ser Lys Asp His Pro Lys Phe Cys Glu
20 25 30

Leu Pro Ala Asp Thr Gly Ser Cys Lys Gly Asn Pro Val Arg Phe Tyr
35 40 45

Tyr Asn Ala Asp His His Gln Cys Leu Lys Phe Ile Tyr Gly Gly Cys
50 55 60

Gly Gly Asn Ala Asn Asn Phe Lys Thr Ile Glu Glu Cys Lys Ser Thr
65 70 75 80

Cys Ala Ala

<210> 62
<211> 252
<212> DNA
<213> Pseudonaja textilis

<400> 62
atgtcttctg gaggtttct ttccttgctg ggactcctca ccctctggga ggtgctgacc 60
cccgcttcca gcaaggacca tccaaaattc tgtgaactcc ctgctgaaac cggatcatgt 120
aaaggcaacg tccccacgctt ctactacaac gcagatcatc atcaatgcct aaaatttatt 180
tatggtggat gtggagggaa tgctaacaat tttaagacca tagaggaagg caaaagcacc 240
tgtgctgcct ga 252

<210> 63
<211> 83
<212> PRT
<213> Pseudonaja textilis

<400> 63
Met Ser Ser Gly Gly Leu Leu Leu Leu Leu Gly Leu Leu Thr Leu Trp
1 5 10 15

Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Lys Phe Cys Glu
20 25 30

Leu Leu Pro Asp Thr Gly Ser Cys Glu Asp Phe Thr Gly Ala Phe His
35 40 45

Tyr Ser Thr Arg Asp Arg Glu Cys Ile Glu Phe Ile Tyr Gly Gly Cys
50 55 60

Gly Cys Asn Ala Asn Asn Phe Ile Thr Lys Glu Glu Cys Glu Ser Thr

65

70

75

80

Cys Ala Ala

<210> 64
<211> 252
<212> DNA
<213> Pseudonaja textilis

<400> 64
atgtcttctg gaggtttct ttcctgctg ggactcctca ccctctggga ggtgctgacc 60
cccgcttcca gcaaggaccc tccaaaattc tgtgaactgc ttccctgacac cggatcatgt 120
gaagacttta ccggagcctt ccactacagc acacgtgatc gtgaatgcat agagtttatt 180
tatggtgat gcccggggaa tgctaacaat ttatcacca aagaggaatg cgaaagcacc 240
tgtgctgcct ga 252

<210> 65
<211> 83
<212> PRT
<213> Pseudonaja textilis

<400> 65
Met Ser Ser Gly Gly Leu Leu Leu Leu Leu Gly Leu Leu Thr Leu Trp
1 5 10 15

Glu Val Leu Thr Pro Val Ser Ser Lys Asp Arg Pro Lys Phe Cys Glu
20 25 30

Leu Pro Ala Asp Ile Gly Pro Cys Asp Asp Phe Thr Gly Ala Phe His
35 40 45

Tyr Ser Pro Arg Glu His Glu Cys Ile Glu Phe Ile Tyr Gly Gly Cys
50 55 60

Lys Gly Asn Ala Asn Asn Phe Asn Thr Gln Glu Glu Cys Glu Ser Thr
65 70 75 80

Cys Ala Ala

<210> 66
<211> 252
<212> DNA
<213> Pseudonaja textilis

<400> 66
atgtcttctg gaggtttct ttcctgctg ggactcctca ccctctggga ggtgctgacc 60
cccgcttcca gcaaggaccc tccaaagttc tgtgaactgc ctgctgacat cggaccatgg 120
gtgacttta ccggagcctt ccactacagc ccacgtgaac atgaatgcat agagtttatt 180
tatggtgat gcaaaggaa tgctaacaac ttataatcccc aagagcaatg cgaaagcacc 240
tgtgctgcct ga 252

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<210> 67
<211> 59
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Formula
      peptide

<220>
<221> MOD_RES
<222> (3)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn

<220>
<221> MOD_RES
<222> (5)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn

<220>
<221> MOD_RES
<222> (6)
<223> Hydrophobic amino acid

<220>
<221> MOD_RES
<222> (8)

<220>
<221> MOD_RES
<222> (10)..(11)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val
      or Leu

<220>
<221> MOD_RES
<222> (12)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn

<220>
<221> MOD_RES
<222> (13)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val
      or Leu

<220>
<221> MOD_RES
<222> (15)
<223> Any amino acid from Table 1 or Table 2 in the specification
      as filed

<220>
<221> MOD_RES
<222> (17)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn
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<220>
<221> MOD_RES
<222> (18)..(20)
<223> Any amino acid from Table 1 or Table 2 in the specification
      as filed

<220>
<221> MOD_RES
<222> (21)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val
      or Leu

<220>
<221> MOD_RES
<222> (22)
<223> Any amino acid from Table 1 or Table 2 in the specification
      as filed

<220>
<221> MOD_RES
<222> (24)
<223> Aromatic amino acid

<220>
<221> MOD_RES
<222> (26)
<223> Any amino acid from Table 1 or Table 2 in the specification
      as filed

<220>
<221> MOD_RES
<222> (27)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val
      or Leu

<220>
<221> MOD_RES
<222> (28)..(31)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn

<220>
<221> MOD_RES
<222> (33)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val
      or Leu

<220>
<221> MOD_RES
<222> (34)
<223> Lys, Arg, His, Asp, Glu, Gln or Asn

<220>
<221> MOD_RES
<222> (36)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val
      or Leu
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<220>
<221> MOD_RES
<222> (41)
<223> Any amino acid from Table 1 or Table 2 in the specification
      as filed

<220>
<221> MOD_RES
<222> (42)
<223> Neutral amino acid, Pro, Ala, Gly, Ser, Thr, Val,
      Leu or Cys

<220>
<221> MOD_RES
<222> (48)
<223> Any amino acid from Table 1 or Table 2 in the specification
      as filed

<220>
<221> MOD_RES
<222> (50)
<223> Any amino acid from Table 1 or Table 2 in the specification
      as filed

<400> 67
Lys Asp Xaa Pro Xaa Xaa Cys Xaa Leu Xaa Xaa Xaa Xaa Gly Xaa Cys
      1           5           10          15

Xaa Xaa Xaa Xaa Xaa Xaa Phe Xaa Tyr Xaa Xaa Xaa Xaa Xaa Xaa Cys
      20          25          30

Xaa Xaa Phe Xaa Tyr Gly Gly Cys Xaa Xaa Asn Ala Asn Asn Phe Xaa
      35          40          45

Thr Xaa Glu Glu Cys Glu Ser Thr Cys Ala Ala
      50          55

<210> 68
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 68
Glu Cys Glu Ser Thr Cys Ala Ala
      1           5

<210> 69
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

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<400> 69

Asn Ala Asn Asn Phe
1 5

<210> 70

<211> 4
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 70

Tyr Gly Gly Cys
1